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HONEY VALUE CHAIN ASSESSMENT REPORT FINAL

LEBANON INDUSTRY VALUE CHAIN DEVELOPMENT (LIVCD) PROJECT

FEBRUARY 2013

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**LEBANON INDUSTRY VALUE CHAIN DEVELOPMENT (LIVCD)
PROJECT**

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1. OVERVIEW OF THE HONEY VALUE CHAIN

Lebanon produces low volumes of honey,. Despite these relatively small market values, the value chain engages large numbers of rural poor Lebanese households, who can participate in honey production because initial investment costs are low, honey comes online within one season, and farmers do not need to own or lease land for the bees. Cooperative labor sharing arrangements at harvesting among rural households further reduce barriers to entry to beekeeping which provides income to over 5,500 rural households. As technical knowledge of harvesting, honey extraction, and hive colonization practices is essential, beekeeping is limited to Lebanese households- unskilled migrant Syrian laborers do not possess the required technical skills to participate.

Recently, Lebanese branded honey has increased in volume and gained access to domestic retail distribution networks. Honey exports to high value GCC markets and the United States are also increasing, as commercial brands transition from bulk to branded exports in Saudi Arabia, and expand within and beyond ethnic markets in the US. The upswing in commercial branded honey volumes has been bolstered by investment and upgrading of quality testing facilities, and growing consumer confidence in Lebanese brands and retail markets. Current Government of Lebanon policies to promote higher product standards in the honey market should accelerate this movement in favor of branded honey which is able to incorporate quality control procedures in its production practices.

The donor community has been continually engaged with honey producers, but interventions have focused mainly on small-scale cooperatives that are often formed for the sole purpose of receiving donor funding and equipment. If these initiatives have had a definite impact in terms of strengthening the productive capacity of small beekeepers, their marketing results are negligible, as cooperatively marketed honey remains insignificant both as a percentage of total production and as a percentage of commercially marketed honey. A meaningful opportunity exists for LIVCD to target commercial honey producers who have been mostly by-passed by donor assistance projects. By helping commercial honey producers establish the needed vertical links with smaller household-level beekeepers to source honey and take advantage of market linkages to seize opportunities in both export and domestic markets, LIVCD will boost incomes for all stakeholders in the honey value chain.

2. VISION

LIVCD engagement will build on the dynamism of the commercial honey market segment to foster growing brand recognition among domestic and international consumers. Targeted improvements and expansion of honey quality testing will boost consumer confidence, and increase access to powerful international markets. As demand for Lebanese honey grows, strengthened vertical linkages between small and medium-scale honey producers and commercial brands, as well as improved technical and managerial practices at this level, will channel profits into rural communities, boosting incomes for all stakeholders in the honey value chain.

3. HONEY MARKET OPPORTUNITIES

THE GLOBAL TRADE OF HONEY

The world honey market has been increasing in terms of value and volume, and features two distinct market segments based on price; expensive and inexpensive honey. In general, large scale honey producers export inexpensive honey, which ranges in price from US\$2.00-US\$ 5.00 per kilo and constitutes the majority of honey trade in terms of volume. Small scale honey producers, including Lebanon, export expensive honey, which ranges in price from US\$8.00- US\$15.00 per kilo and is exported in much lower quantities. The market for mid-priced honey, at least among the largest players in the honey market, is very small.

TABLE 1: TOP 5 WORLD EXPORTERS AND IMPORTERS OH HONEY

	Value	Volume	Price	Share of world market by value	Share of world market by volume
Exporters of Honey in 2011					
World	\$1,671.7	493,573	\$3.39	100.0%	100.0%
Argentina	\$223.4	72,356	\$3.09	13.4%	14.7%
China	\$201.4	99,988	\$2.01	12.0%	20.3%
Germany	\$120.7	20,093	\$6.01	7.2%	4.1%
Mexico	\$90.4	26,888	\$3.36	5.4%	5.4%
New Zealand	\$87.1	8,411	\$10.35	5.2%	1.7%
Importers of Honey in 2011					
World	\$1,694.0	495,883	\$3.42	100.0%	100.0%
USA	\$401.2	130,485	\$3.07	23.7%	26.3%
Germany	\$278.0	78,554	\$3.54	16.4%	15.8%
UK	\$124.5	35,361	\$3.52	7.3%	7.1%
Japan	\$117.7	40,584	\$2.90	6.9%	8.2%
France	\$107.7	26,964	\$3.99	6.4%	5.4%

Source: COMTRADE

The value of global honey trade has increased by 84 percent since 2007 to a total of US\$1.67 billion annually. Over the same period, the price of honey has risen from an average of US\$ 2.28 per kilo to US\$3.39 per kilo. As shown in Table 1, China exports the largest quantity of honey totaling 20 percent of world honey trade, equivalent to 100,000 tons. Chinese honey sells at the lowest average sales price of US\$2.01 per kilo. Argentina exports the second largest volume of 72 thousand tons at an average sales price of US\$ 3.09 per kilo, which is one dollar per kilo higher than China, but still US\$ 0.20 below the average world sales price. After China and Argentina, export quantities drop significantly with India, Vietnam, Mexico, Brazil, Germany, and Spain exporting between 18 and 29 thousand tons of honey each.

In the higher priced specialty part of the market, New Zealand honey exports totaled 8.500 tons in 2011, and received the highest average sales price of any major exporter with an average price of US\$ 10.35 per

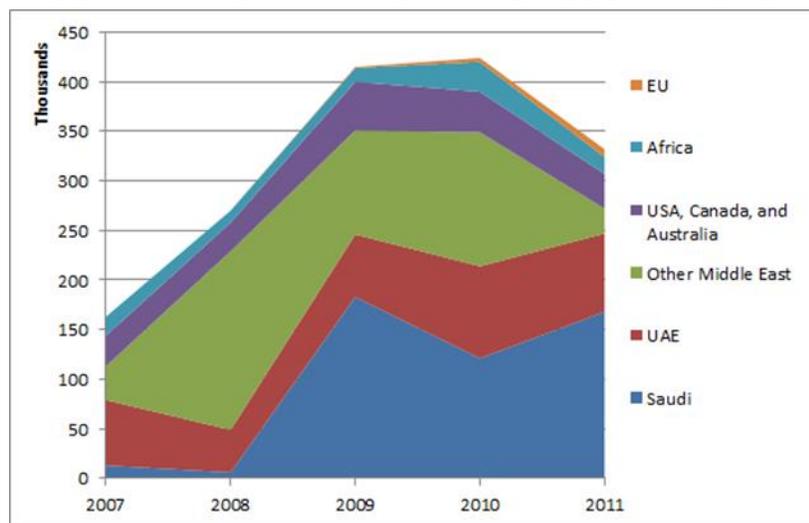
kilo. Over five years, average sales price of honey from New Zealand has gone up by 45%, and the volume of exports from New Zealand has risen consistently since 2007 by over 2,500 tons from 5,606 tons in 2007 to 8,411 tons in 2011. This suggests that although global honey markets have high volumes of cheap honey, consumers are willing to pay a price premium for honey that is perceived to be of a higher quality.

LEBANESE EXPORT MARKET ANALYSIS

Lebanon exports relatively small quantities of honey to a diverse set of trade partners around the world. Lebanese honey exports do not claim a significant market share in any of its destination markets, and generally are among the most expensive honeys in the world marketplace, competing with other expensive honeys from New Zealand and the EU. Lebanese honey is exported in bulk for repackaging and in branded bottles. The majority of honey exports are exported in branded bottles by commercial processors to retail markets; but unlike many agricultural value chains, small quantities of bulk unbranded product are commonly exported through family and social networks throughout the region .

Lebanon exported 17 tons of honey in 2007, peaking to 34 tons in 2010, and falling to 26 tons in 2011. Over this time, the average sales price of honey rose from US\$ 9.59 in 2007 to US\$ 12.85/kg in 2011. Figure 1 displays the total value of honey exports by destination market. In 2011, 82 percent of Lebanese honey exports by value went to Middle Eastern markets, 11 percent went to the American, Canadian, and Australian markets, 5 percent went to African markets, and 2.4 percent went to European markets (specifically to Sweden and Switzerland, which are not members of the EU). In 2011, Saudi Arabia accounted for the largest share of Lebanese honey exports at 51 percent of total value of exports, with UAE accounting for an additional 24 percent. Growth in value of honey exports account for most of the expansion of honey exports, especially between 2008 and 2009. See Annex 1 for additional Lebanese honey trade data.

FIGURE 1: VALUE AND DESTINATION COUNTRIES FOR LEBANESE HONEY EXPORTS



Source: COMTRADE

SAUDI ARABIA MARKET: With a large and wealthy population that consumes the most honey per capita of any other Middle Eastern country, Saudi Arabia is a highly desirable export market for Lebanese

honey. Very little honey is produced domestically in Saudi Arabia, and the country imports large volumes of honey- over 10,000 tons in 2011.

Saudi honey imports can be divided into two market segments. Inexpensive honey comprises 80 percent of honey imports, and costs under US\$ 5.00 per kilo, and expensive honey, which comprises 20 percent of imports and costs over US\$8.50 per kilo. Inexpensive honey, such as that from China, India, and Argentina is typically re-exported, while expensive honeys are consumed in Saudi Arabia.

High shelving fees, which can be as high as US\$ 20,000 to access the largest retail networks in Saudi Arabia, pose a significant challenge to Lebanese honey exporters. These companies typically have not invested enough in export marketing and branding strategies, so product turnover is not high enough to offset high market entry fees.

In Saudi Arabia, the value of honey imports totaled US\$ 45.6 million in 2011, up from just over US\$ 27 million in 2007 and 2008 and reflecting a 68% increase in value over 5 years. In value terms, this translates to an imported growth in value between 2007-2011 of 21 percent, whereas volumes increased by 11 percent over the same period. This implies that overall prices for honey imports to Saudi Arabia have been increasing. As shown in Table 2, Lebanon has been one of the main benefactors of this growth, with the second largest growth in percentage terms of exporters to Saudi Arabia after China—and at a price that is eight times higher.

TABLE 2: SAUDI HONEY IMPORT TRADE INDICATORS

Country and rank of Importer by Value	Imported value 2011	Share in Saudi Arabia's imports	Imported quantity 2011	Unit value	Imported growth in value between 2007-2011	Imported growth in quantity between 2007-2011	Imported growth in value between 2010-2011	Ranking of partner countries in world exports
	(US\$ '000)	(%)	(MT)	(US\$/kg)	(%)	(%)	(%)	Rank
Total	45,647	100	10,790	\$4.23	21	11	27	
Germany (1)	10,559	23.1	792	\$13.33	28	16	59	3
Mexico (2)	5,804	12.7	1,729	\$3.36	9	-4	5	4
Yemen (3)	5,099	11.2	580	\$8.79	3	7	-23	33
Argentina (4)	4,531	9.9	1,473	\$3.08	22	7	20	1
India (5)	4,252	9.3	1,679	\$2.53	68	55	-11	7
Pakistan (6)	3,235	7.1	844	\$3.83	10	-11	93	41

China (7)	2,519	5.5	1,248	\$2.02	368	294	97	2
Lebanon (18)	168	0.4	10	\$16.80	125	68	39	66
New Zealand (21)	68	0.1	4	\$17.00	98	47	-1	5

Source: COMTRADE

In fact, the average price of Lebanese honey in 2011 was US\$16.80/kg, significantly above the average price of honey in Saudi Arabia. As shown below in Figure 4, the average value of Lebanese honey exports to Saudi Arabia has been trending sharply and steadily upward since 2008. These figures are driven mainly by a transformation in the type of exports flowing from Lebanon to Saudi Arabia, with a rapid growth in branded sales relative to bulk in 2009 accompanied by a large jump in average sales price, from US\$ 6.00/kg, to US\$ 13.07/kg. This trend continued in 2010 and 2011, maintaining an Average sales price of US\$16.80/kg in 2011. Branded honey exports to Saudi are predominantly from the commercial producer Jabal el Sheikh, but other branded Lebanese exporters such as Kaddoum have also begun to sell into the Saudi Arabian market.

TABLE 3: AVERAGE SALES PRICE OF LEBANESE HONEY EXPORTS, WORLD AND MIDDLE EAST REGION

	2007	2008	2009	2010	2011	% change
World Average	\$9.59	\$12.81	\$12.61	\$12.44	\$12.85	34.0%
Saudi Arabia	\$6.50	\$6.00	\$13.07	\$17.29	\$16.80	158.5%
United Arab Emirates	\$11.00	\$14.33	\$12.60	\$13.29	\$13.17	19.7%
Other Middle East	\$15.50	\$12.86	\$16.60	\$9.64	\$24.00	54.8%

Source: Trade Map

UNITED ARAB EMIRATES MARKET: As shown in Table 4 below, the United Arab Emirates (UAE) imported US\$11.7 million of honey in 2011, equivalent to 2,354 tons for an average price of US\$4.98 per kilo. UAE honey imports have risen in both value and volume since 2007 by 12 and 6 percent, respectively. Notably, imported growth in value was 63 percent between 2010 and 2011, significantly higher than average growth rate over the last 5 years. Similar to the Saudi Arabian market, imports of honey to the UAE can be divided into two market segments, inexpensive honey and expensive honey. Inexpensive honey includes honey with an average sales price of under US\$5.00 and comprises about 70 percent of UAE honey imports. Expensive honey includes honey with an average sales price of over US\$ 9.30/kg, and comprises about 30 percent of honey imports. Lebanese honey, with an average sales price of US\$13.17/kg in 2011, falls into the expensive honey segment, competing predominantly with honey from Europe, although New Zealand and Yemen also supply expensive honey to UAE.

Within the UAE honey market, Lebanon claims 0.7 percent market share. Although over five years its volume and value of exports to UAE have been rising, between 2010 and 2011 the total value of Lebanese honey imports fell by 15 percent. The price of Lebanese honey is one of the highest, and is

about US\$ 3 more per kilo than honey from Yemen, which claims a much higher market share of 11.6 percent.

TABLE 4: UAE HONEY IMPORT TRADE INDICATORS

Country and rank of importer by value	Imported value 2011	Share in UAE's imports	Imported quantity 2011	Unit value	Imported growth in value 2007-2011	Imported growth in quantity 2007-2011	Imported growth in value 2010-2011	Ranking of partner countries in world exports
	(US\$ '000)	(%)	MT	(US\$/kg)	(%)	(%)	(%)	Rank
Total	11,722	100	2,354	\$4.98	12	6	63	
Germany (1)	3,028	25.8	273	\$11.09	15	4	91	3
Yemen (2)	1,356	11.6	132	\$10.27	55	49	316	33
Australia (3)	1,170	10	254	\$4.61	6	2	16	20
China (4)	1,126	9.6	554	\$2.03	17	17	67	2
USA (5)	864	7.4	307	\$2.81	20	36	-11	21
Switzerland (6)	719	6.1	54	\$13.32	10	0	68	36
India (7)	689	5.9	299	\$2.30	25	11	51	7
Pakistan (8)	469	4	116	\$4.04	2	-16	81	41
France (9)	449	3.8	39	\$11.51	15	6	312	18
United Kingdom (10)	397	3.4	38	\$10.45	12	13	12	25
New Zealand (11)	342	2.9	24	\$14.25	10	-5	24	5
Egypt (12)	325	2.8	99	\$3.28	29	44	62	42

Lebanon (15)	79	0.7	6	\$13.17	12	9	-15	66
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KUWAIT AND QATAR MARKETS:

Kuwait imported 3,219 tons in 2008, which 864 tons came from Saudi Arabia which is the largest exporter of honey to the Kuwait Market. Lebanon's exports to the Kuwait have been decreasing from 12 tons in 2008 to 1 ton in 2011.

Qatar imports most of its honey from Saudi Arabia, 206 tons in 2008. Germany exported 28 tons in 2008, UAE 17 tons, Greece 3 tons and Lebanon 1 ton. The Lebanese honey export market grew in value by \$389,000 from 2006 to 2010. Exports to Kuwait and Qatar reached their highest at \$423,000 in 2010 to later on decrease by 21% in 2011 to reach \$334,000.

OTHER HIGH VALUE MARKETS

UNITED STATES OF AMERICA: The USA imports high quantities of inexpensive honey from all over the world, and relatively smaller quantities of expensive honey from smaller scale producers including Lebanon and Greece. In Lebanon's case, the US's relatively higher thresholds for antibiotic residue compared to the EU, has made it an easier market to enter.

Lebanese honey imports are significantly more expensive than other honeys, priced at US\$19.00 per kilo compared to an average price of US\$ 3.07 per kilo, and the quantity imported is very small, under 0.1 percent of the USA honey import market. Nearly all Lebanese honey exports to the United States are bottled in Lebanon with Lebanese brands, and sold in ethnic markets that target the Lebanese diaspora community who are willing to support the notably higher price of Lebanese honey. . As of 2012, Lebanese exports to the US are still essentially in the very early stages of market penetration and success is far from assured.

TABLE 5: USA HONEY IMPORT TRADE INDICATORS

Country and rank of importer by value	Imported value 2011	Share in USA's imports	Imported quantity 2011	Unit value	Growth in value 2007-2011	Growth in quantity 2007-2011	Growth in value 2010-2011	Ranking of partner countries in world exports
	(US\$ '000)	(%)	MT	(US\$/kg)	(%)	(%)	(%)	Rank
World	\$401,186	100.0%	130,495	\$3.07	21	5	32	
Argentina (1)	\$109,145	27.2%	33,502	\$3.26	31	17	96	1
India (2)	\$78,339	19.5%	26,837	\$2.92	49	32	61	7
Vietnam (3)	\$70,758	17.6%	27,630	\$2.56	26	13	44	8
Brazil (4)	\$48,761	12.2%	14,981	\$3.25	17	1	62	9
Canada (5)	27,774	6.9%	7,148	\$3.89	-4	-16	-30	14
New Zealand (8)	\$5,478	1.4%	968	\$5.66	48	28	27	5
Greece (20)	\$582	0.1%	53	\$10.98	-4	-14	9	34

Lebanon (44)	\$38	0.0%	2	\$19.00	28	0	-12	66
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Source: COMTRADE

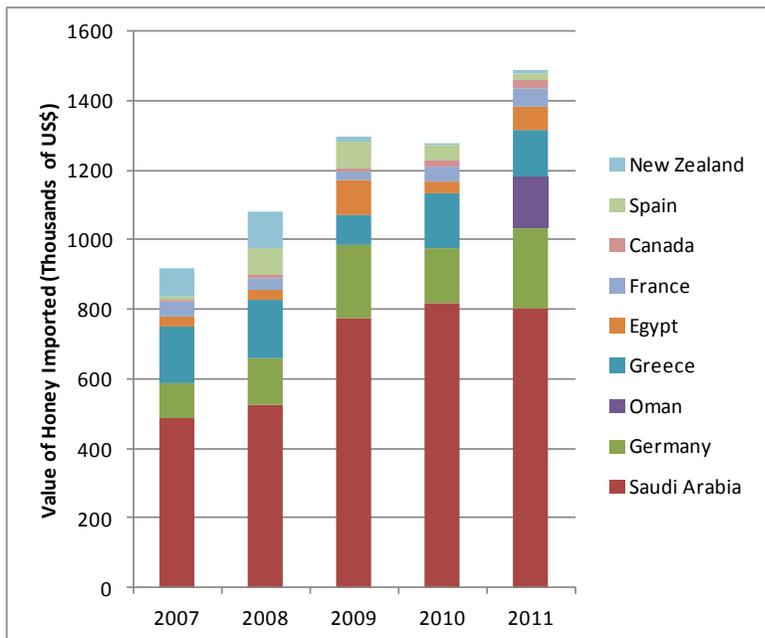
EU MARKET: The European honey market features high volumes of expensive honey. The 3 biggest importers in Europe are Germany, United Kingdom, and France who import around 75% of the honey exported to Europe. Europe is not importing and has not established a stable trade relationship with any Arab exporter of honey. India is a major exporter to Europe, exporting 78,554 tons to Germany, 35,361 tons to the United Kingdom and 26,964 tons to France in 2008.

A 2009 shipment of honey from Lebanon with antibiotic residues for which the EU imposes a zero level threshold led to a 3 year ban on Lebanese honey imports that ended in December 2012. Thus, as of 2013 Lebanon can export to the EU again, although a high number of conditions and stringent requirements for quality testing and certification make it exceedingly difficult. Expansion of Lebanese exports to Europe will be difficult until domestic capacity for quality testing and certification is improved.

DOMESTIC HONEY MARKET ANALYSIS

According to the FAO, the per capita consumption in kg of honey is about 0.7 kg per year, about average compared to other Middle East countries. Lebanon produced around 1,361 tons of honey in 2011, and imported in 2010, 2011 between 203 to 229 tons. As shown in Figure 2, Lebanese trade in honey has increased significantly since 2007, and the country is a net importer of honey. Import values for honey increased by around 62.4% from 2007 to 2011, from US\$ 936,000 to US\$ 1,520,000, while the export market increased by 105% from US\$ 163,000 to US\$ 334,000. In 2011, 61 percent of imports were imported from Saudi Arabia. Lebanon also imports expensive honey, with an average overall value of all honey imports at US\$7.49 per kilo.

FIGURE 2: LEBANESE HONEY IMPORTS BY VALUE 1



Consumers prefer to buy honey directly from the beekeepers house or farm, and will pay a significant market premium for unbranded honey purchased from beekeepers. As presented in Figure 2, around 77% of the total honey production is sold directly by beekeepers to consumers at around USD20/kg . Meanwhile, branded bottled honey from retail markets, which in many countries would be more expensive, is sold at a 25 percent lower price. This lower price is due to a distrust of brands, which is rational in a context of limited quality testing and brand accountability. The advantage of this direct bulk market sales channel is dissipating as supermarkets become an increasingly reliable part of urban life. Reflecting this trend, domestic honey brands only started selling in retail markets in 2008, and have since increased their market share to over 20% of domestic retail sales.

OVERALL END MARKET TRENDS

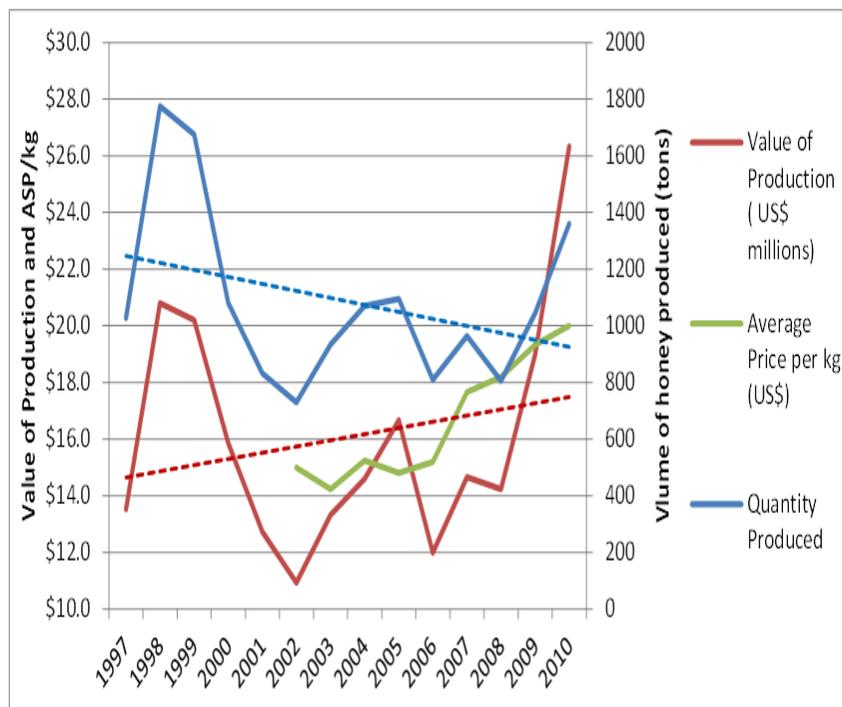
Overall market trends for Lebanese honey seem fairly positive. Three particularly salient trends over the last five year that need to be underlined:

- (1) There has been a significant “upgrading” in the quality of Lebanese honey exports to the region—driven mainly by the growth in branded exports in Saudi Arabia and by the continued strength of Lebanese brands in the UAE.
- (2) Initial market penetration into the US market has occurred, and the door to exporting to Europe is open once again after being shut for three years
- (3) While the domestic market is still dominated by direct household sales of unbranded bulk honey, Lebanese brands of bottled honey have made very significant inroads in the past few years. Currently, at least two companies have relationships with large distributors to sell into the expanding supermarket segment.

4. HONEY PRODUCTION AND PROCESSING

Lebanon produces small amounts of high value honey. As shown in Figure 8, the total volume of honey produced in Lebanon has fluctuated with a long term negative trend since 1997. Despite this longer term trend, production has been increasing strongly since 2008. In contrast to honey volumes, values have maintained a slight positive trend. This is largely due to the consistent increase in domestic honey process that has occurred since 2005 from US\$14/kg to US\$20/kg in 2010. FAO projected continued upward trends for volume and value of honey production in 2011 and 2012. Key factors driving expansion of honey production since 2008 have been the support to small producers provided by a variety of NGO and donor projects, and, most importantly, by the growth of linkages between producers and some of the emerging commercial honey brands.

FIGURE 3: LEBANESE HONEY PRODUCTION, HIVES, AND AVERAGE PRICES



Source: COMTRADE

Honey production in Lebanon is predominantly mountain poly-floral honey, and orange blossom honey. Mountain honey is produced at high altitudes where bees forage on a diversity of flowers, and claims a high market price due to its purity and flavor. Small and large scale beekeepers produce mountain honey. Orange blossom honey is produced in citrus groves, usually at lower altitudes along the coast in the winter and spring when orange trees blossom. Professional beekeeping is based on a vertical transhumance, which means moving hives from high to low altitudes following temperature variations and flowers blooming. Beehives can be moved from the coast during spring to medium altitude then to a higher altitude during the summer months, alternating between orchards, natural flowers, and forests. See Annex 2 for more details on production seasonality.

Beekeeping is an activity that is well adapted to small household levels of production, in that labor inputs are relatively minimal except for the harvest period when trays of honey must be removed from hives and extracted. Fixed costs are a relatively small portion of total costs, meaning that scale economies from larger production units are relatively small and that large producers do not have a clear advantage over small producers in terms of production costs. As shown in Figure 4 below, the lowest operating costs on a per unit of output basis is for the smallest category of beekeeper with only 25 hives with only a slight uptick in operating costs for medium and large-scale beekeepers. For medium-scale producers, it is possible for beekeepers to make due largely with family labor and cooperative labor exchanges with fellow nearby beekeepers during harvesting periods. Large-scale beekeepers, however, often hire a few skilled laborers to help harvest honey. Profitability is good for all models, with healthy profits in year one for the medium and large producers, even without any amortization of first year investment costs. Smaller beekeepers with only one harvest need to wait until year two before fully recouping their initial investment, with good profitability in the years that follow

The major production constraints to beekeeping include the simple lack of understanding of modern beekeeping techniques and principals. As noted above, beekeeping requires a certain amount of technical

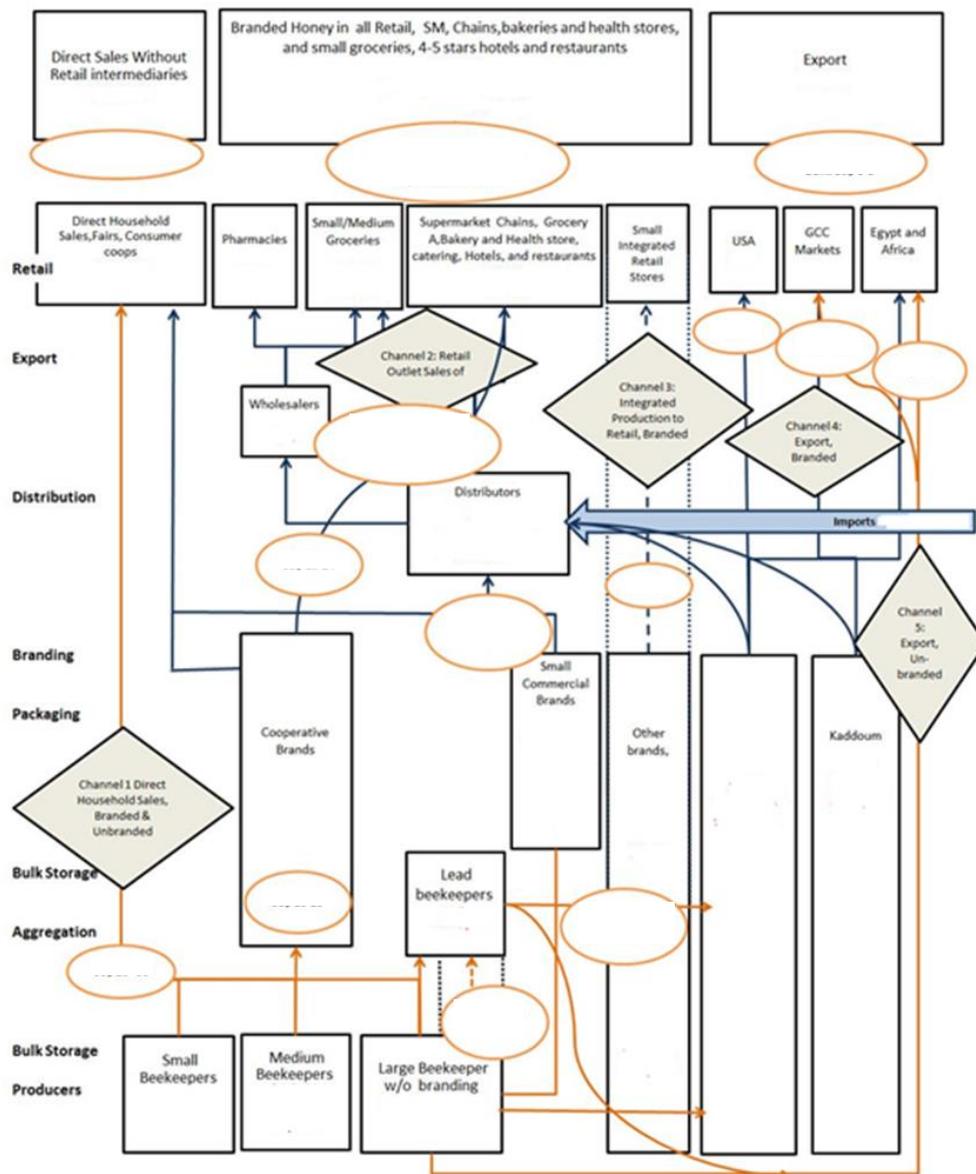
knowledge that is difficult to attain without practical experience and some theoretical training. The second main obstacle to increased production comes from diseases affecting honey bees. These include the American foulbrood disease, the varroa mite, and colony collapse disorder (CCD).

The American foulbrood disease is a bacterial disease that affects bee larvae and can be controlled through the use of antibiotics. The varroa mite acts as a parasite and carries a viral disease that attacks bee colonies. The varroa mite has caused significant level of hive mortality in Lebanon, because it has not been treated effectively. Strategies of control for varroa include the use of pesticides, which should be applied after harvest to avoid contamination of honey destined for human consumption and quarantine or destruction of infected hives and colonies.

CCD is a phenomenon that has been occurring with increased frequency in Lebanon in which worker bees disappear from the hive. Although the causes are unclear, there is a general hypothesis that CCD is caused by environmental degradation such as increased pesticides, parasites, and limited or contaminated water supplies. In an interview with a leading beekeeping expert, they expressed serious concern regarding the impact of CCD on Lebanese bee colonies. A significant uptick in bee losses was also noted by the heads of beekeeper associations in the South and North of Lebanon in interviews with LIVCD.

5. VALUE CHAIN STAKEHOLDER ANALYSIS

FIGURE 4: HONEY VALUE CHAIN STAKEHOLDER MAP



The structure of the honey value chain map is given in Figure 4, the Value Chain Map. This map shows the main functions, volumes of product flow and prices per Kg at different points in the value chain. Descriptions of the main actors are given below by functional level.

PRODUCTION

In general, among all categories of beekeepers in Figure 4, the model for beekeeping in Lebanon is for honey producers to place their hives on privately and publicly owned land. For some of the larger

commercial producers, who have large land holdings, this may be on their own land, but by and large most hives are located on land that does not belong to the honey producer. Hives are usually placed on land belonging to people who are known to the beekeeper or who grant the beekeeper permission to place hives on their land. Common practice is for the beekeeper to provide some gift honey to the land owner. Formal rental payments are largely unknown. The land owner generally provides no services other than accepting that the hives be placed on his property. All upkeep and management of the hives (including harvesting) is the responsibility of the beekeeper.

During the honey value chain assessment it has been noticed that the majority of beekeepers are males due to the physical effort required to achieve the honey collection tasks, and the female's lack of awareness and understanding of the feasibility and flow of beekeeping practices. In addition, having direct contact with bees raises concerns for women. Once females become part of beekeeping cooperatives, working in this field could become an important source of income. However, the assessment has shown that certain cooperatives aware of the importance of women enrollment in beekeeping are attracting women beekeepers to their cooperatives.

The different categories of beekeepers at the bottom of Figure 4 include:

SMALL BEEKEEPERS: In general, small beekeepers have not more than 25 hives. A family with 25 hives in full production with one harvesting period a year can in general expect to harvest 375Kg of honey per year which provides \$7,500 in revenue with standard beekeeping practices. Honey sales thus provide important supplemental family income but are not the main source of household revenue. The level of fixed investment required at this level is relatively modest for hives and the needed equipment. Households producing at this level generally sell all their production through networks of personal contacts to family and friends in the immediate area and in Beirut and other urban areas.

MEDIUM BEEKEEPERS: Medium-sized beekeepers have generally between 26 and 50 hives. At this level, beekeepers are mostly operating as microenterprises with an objective of profit maximization while using mainly unpaid family labor. Around 50% of beekeepers at this level collect two harvests per year. They do this by moving beehives between the intermediate mountain zones and the coastal areas to take advantage of the differing harvest periods for and for honey dew and multiple flower honey and citrus flower honey. With two harvests, a beekeeper with 50 hives can produce 1,500 Kg of honey per year for \$24,000 in revenue. At volumes such as these, in general it is difficult for medium beekeepers to sell all their honey solely through personal networks. They therefore need to find other sales outlets including cooperatively marketed honey and commercial buyers of honey.

LARGE BEEKEEPERS WITHOUT BRANDS: These producers exhibit many similarities to medium beekeepers. Beekeepers at this level generally do not have more than 200 hives, since after about 100 hives, the logistical difficulties of active hive management and migration become too burdensome for small family enterprises. Virtually all large beekeepers will practice hive migration to yield at least two harvests per year and around 30% of large beekeepers will migrate hives between all three production zones (High Mountain, Intermediate Mountain and coastal areas) to get three harvests per year. Very few large beekeepers (under 10%) keep their hives in only one place throughout the year. There are only about 10 beekeepers in Lebanon with over 200 hives all of which have their own brands. (These are described below in the paragraphs on branded honey actors). In general, a large beekeeper with 100 hives practicing annual hive

migrations to get two harvests can earn US\$ 42,000 in annual revenue from 3,000 tons of honey. Large beekeepers need to have a specific sales strategy to be sure of selling their production. In addition to using their personal contact networks as all beekeepers do, they follow three broad types of sales strategies. If they have personal relationships through family or contacts in foreign markets they may use these to sell their own unbranded honey into export markets. Exports of this type go mainly to Lebanese diaspora communities in Africa and to Egypt and the Persian Gulf countries where much of this production is repackaged and possibly mixed for sale under another label. Alternatively, they may sell into the domestic market through other beekeeper collectors who are essentially intermediaries for one of the commercial branded honey producers (see lead beekeeper section on aggregation below). Lastly they may market through cooperatives, although this channel is quite marginal in terms of overall volumes.

LARGE BEEKEEPERS WITH BRANDS AND INTEGRATED RETAIL SALES

OUTLETS: This category of large beekeepers has invested in maintaining their own specialized retail outlets in Beirut and other urban centers to be able to access consumers in urban areas in addition to using fairs and exhibitions stalls that are manned by the beekeepers direct employees or family. The main players in this category of actor have around 300 hives each.

LARGE BRANDED BEEKEEPERS/EXPORTERS: As shown in Figure two there are two main players in this category of actors. These are actors who have made a concerted effort to develop a brand name for both domestic and export markets. They work through distributors for their local sales and export directly themselves. Supply strategies are, however, significantly different between the two firms. Both actors serve mainly the local market, with exports being a relatively small part of their overall sales. Most branded exports are to the Gulf countries, although one actor has succeeded in penetrating the US honey market with small export volumes.

AGGREGATION

Since honey is a product that stores quite well, with little risk of spoilage under normal circumstances, there is little need for trader intermediaries to rapidly assemble perishable fresh produce and bring it to market. This is a function that beekeepers mainly do themselves. There are two exceptions to this general rule:

LEAD BEEKEEPERS play an important role particularly in their procurement system. The LIVCD study team identified five lead beekeepers in the Minieh-Danniyeh region in Northern Lebanon who buy tins of honey from other medium and large beekeepers and sell mainly to a large branded beekeeper/exporter, as well as to other small brands. Lead beekeepers buy from other beekeepers in 25 gallon containers and store for not over one month before sending product to a large branded beekeeper/exporter. The Minieh-Danniyeh region has high production of honey, but because of isolation, it lacks access to markets. Thus lead beekeepers are able to pay a considerably lower price for honey US\$ 6-7 for orange blossom honey compared to US\$ 20 when sold directly to consumers. 2013 data This dynamic optimizes costs for commercial buyers by grouping honey shipments before transport. The relationship between lead beekeepers and their client medium and large farmers seems very strong as they report 95% of their sales volume go through this mechanisms.

These relations are governed by written contracts with set terms of volume, price and payment conditions. Before buying, they send samples of honey to the Chamber of Commerce laboratory

facility in Tripoli for testing. Over 100 tons of honey per year transit through this aggregation method.

COOPERATIVE HONEY BRANDS: A number of donor projects have driven the formation of marketing cooperatives, which need to be differentiated from the beekeeper cooperatives. The NGO supported cooperatives include B Baladi (supported by WRF/USAID), Intajouna (supported by Caritas) and Batrounyat (supported by the Italian Government). Jezzine Cooperative follows a standard cooperative model in which members contribute honey to a common marketing unit staffed by cooperative employees whose costs are paid for by the margin between an initially established beekeeper price and the eventual sales price after deduction of all marketing and processing costs. Any leftover earnings after all costs are paid are then available for rebates to members. Caritas and Batrounyat follow the same model but source their honey from beekeepers whose membership is not mandatory. To date, such marketing cooperatives have failed to capture anything but a residual share of the market. This seems mainly due to their member's preference to market honey directly to consumers due to higher prices in the direct to household sales channel.

SMALL BRANDS: These are small brands that source honey from beekeepers, and have made a concerted effort to establish their own brand name. These actors were able to develop brand equity as "Natural" products, and have an assortment of products mainly in the jam category. Small brands lack the volumes required by major distributors and generally work through smaller distributors with retailer clients.

WHOLESALE/DISTRIBUTION/IMPORTING

As for aggregation, the wholesale trade segment of the honey value chain is relatively small. It is limited mainly to the branded segment of the domestic market. Key actors include:

DISTRIBUTORS/IMPORTERS: These actors comprise two broader types. The largest distributors have well developed networks of retail clients to whom they supply a large varieties of domestic and imported products. These larger distributors have significant leverage with major supermarkets and retail chains. Large distributors which are able to place product on retail shelves all throughout Lebanon require minimum product values of \$1 million per year, and are thus only accessible by the largest Lebanese producers. Below this category, there are smaller distributors with more limited client networks. All the Lebanese producers of branded honey (with the exception of the three large producers who have their own retail outlets) are required to sell through distributors if they want to access large numbers of retailers.

WHOLESALE: Wholesalers of honey are second level players who maintain exclusive agreements with individual distributors to store and deliver product to retail outlets in zones that distributors cannot reach directly from their own warehouses. They procure honey only through distributors and cannot be accessed directly by honey producers. Pharmacies are served by a separate category of pharmaceutical product wholesalers.

RETAILING

As shown in the value chain map, retail outlets selling branded honey from imports and domestic production include a variety of retail outlets. These are: small medium neighborhood groceries, pharmacies (who sell honey as a "health" product), and group of larger clients consisting of hotels,

restaurants and caterers (HoReCa), supermarkets and the largest category of grocery stores (Category “A”).

BUSINESS DEVELOPMENT SERVICE PROVIDERS

The honey value chain includes a number of key service providers as follows.

BEEKEEPING EQUIPMENT AND HIVE SELLERS: There are numerous stores in different regions of Lebanon that stock the most common equipment required by beekeepers. This includes suits, hives, feeders, stainless steel storage tanks, extractors and beeswax. Since the failure of the only two Lebanese bee selection centers (Safadi foundation in the Akkar and the Chakara center) there are no certified sources for queen bees from domestic selection centers. Most farmers, therefore either source queen bees from their neighbors or use imported queens mainly from Argentina or Egypt. The other input whose local supply is somewhat problematic are antibiotics and varroa pesticide treatments. Many beekeeping stores stock such products, which are mainly Chinese, but there are concerns about the quality and possible counterfeiting.

HONEY TESTING LABORATORIES: There are three labs that test honey in Lebanon: IRI, LARI and at the Chamber of Commerce of Tripoli (QCC). The Tripoli lab’s honey testing equipment was funded by USAID. The Tripoli lab is the main lab used by honey exporters who are required to test for export markets. Tests completed at the Tripoli lab include: acidity, humidity, hydroxymethylfurfural (HMF), conductivity, antibiotics residues, which may result from the drug beekeepers use to control the bacteria causing American foulbrood disease.

BEEKEEPING COOPERATIVES: Over the last several years, the Ministry of Agriculture has encouraged the formation of farmer cooperatives to help with honey production issues. Cooperatives have been formed mainly to help organize input supply and provide local level farmer based extension services. There are 62 honey cooperatives in Lebanon, distributed throughout Mount Lebanon (17), Bekaa (9), North Lebanon (20), and South and Nabatieah (16). Despite this high prevalence of cooperatives, only about 9 are now actively working with beekeepers. Many of the non functional cooperatives were formed by donors as vehicles for distributing aid and technical assistance which stopped functioning once project funds were spent. Other cooperatives were formed by member beekeepers only to receive aid from the MoA. The active cooperatives have membership numbers that vary between 100 and 300. Most of these cooperatives offer fee-based honey extraction with centrifuges and, in theory more than practice,

cooperative marketing services for their members’ honey. However, volumes of cooperatively marketed honey are quite small and are mainly the fruit of the three cooperatives mentioned above under “cooperative honey brands.” Thus the main function of beekeeping cooperatives in Lebanon is not as marketers or sellers of honey, but the provision of production and marketing related services to their member beekeepers. Common services provided include: input ordering, honey extraction, bottling, honey humidity reduction, wax recycling, distributing anti-varroa treatments from the MoA, and

Honey Supply Outlets and Locations

- Yazbek- Jdeydet Al-Maten
- Jawad- Ghaziyeh, Saida
- Ellek- Nabatiyeh
- Abi Sleyman- Jbeil
- Eefel- Naeemeh, Chouf
- Tahineh- Toul, Nabatiyeh
- Mamlaket Al-Nahel- Baakleen
- Al Hayek- Ghaziyeh, Saida
- Milor- Mansouriyeh, Maten
- Mamalaket Al-Nahel- Kfar Akka, Kourah

extension. Few cooperatives are financially sustainable, and membership fees often do not cover the cost of operations, which include rent, machinery maintenance, and other expenses.

Despite the limited formal impact of beekeeper cooperatives, the training provided by the MOA and various donors to individual cooperative members has in many cases created networks of skilled beekeepers who spontaneously cooperate with neighbors to combat diseases, share queen bees and honey to establish new colonies, share extraction equipment and help each other at harvesting in reciprocal labor sharing agreements. These are no small achievements and have helped to create a favorable enabling environment for beekeeping in many areas.

VALUE CHAIN CHANNELS AND GOVERNANCE

The honey value chain comprises five specific sub-segments that are indicated in the Value Chain Map. The main characteristics of each are presented below.

CHANNEL 1: DIRECT HOUSEHOLD SALES

In this channel, honey producers sell directly to households. This is by far the largest value chain segment in terms of overall volume. The vast majority of flows in this segment are from individual producers to consumers, most of which are small, medium and large farmers. But even commercial honey producers will sell small volumes direct to consumers who visit their processing units (although these volumes are insignificant in terms of total sales). Purchase decisions are governed mainly by personal relationships and contacts between the buyer and seller and the perceived “authenticity” of farm-produced product. Most sales are un-branded except for the small volumes from commercial producers. Prices in this segment are very high, reflecting the fact that this is essentially a “direct to retail” segment. Given the importance of personal relationship in this segment, each farmer has a sales capacity that is basically limited by the absorptive capacity of his relationship network. Most farmers are able to sell around the output from around 20 hives through such personal networks. This channel has limited potential for value added interventions outside of basic production, due to the high prices already being received by farmers. Simply put, other than increasing production and encouraging new entry from small farmers, it is difficult to improve sales conditions or terms in this channel since they are already extremely attractive.

CHANNEL 2: SALES OF BRANDED HONEY THROUGH RETAIL STORES

This market channel is dominated by the commercial sellers of branded honey, but includes many other key actors including distributors and retailers. Prices to the consumer are roughly equivalent to Channel 1, but are much lower at the lower levels of value chain, reflecting the number of actors involved. This highlights a key difference with Channel 1: farm-level prices are much lower for producers who sell into this channel as opposed to Channel 1. Since cooperatives have tended to focus mainly on small farmers who have superior market alternatives available to them by simply selling on their own into Channel 1. Thus honey going into Channel 2 is flows mainly from medium and large producers and from commercial processors own in-house beehives who have “excess production” that cannot be sold through personal networks. Transactions at the bottom of the value chain map in Channel 2 tend thus to be at lower prices and higher volumes than in Channel 1.

Governance systems in Channel 2 are not yet well established. Only one commercial producer, is able to assume a lead firm role, establishing quality and pricing parameters to its suppliers by offering them longer term relationships and the ability to take all their production that meets quality standards. Other commercial players have not yet established such lead firm supply mechanisms, either because they

produce more in-house or because their volume of business has not progressed enough to offer them the same access to retail markets that large producers enjoy. The role of retail distributors is quite important in this Channel, since they control access to retail outlets for branded honey sellers. The imposition of annual minimum turnover thresholds of USD one million is quite important in this regard, since specialized sellers of branded honey who are under this threshold face difficulties gaining access to large numbers of retailers that they need to get an important market share. This Channel presents numerous opportunities for intervention to increase volumes of production and improve quality and standards and cooperation among commercial processors to help them develop product strategies and distribution plans.

CHANNEL 3: INTEGRATED PRODUCER-RETAIL SALES

The business model in this chain reflects the desire of commercial branded honey producers to develop their own retail outlets, without having to go through distributors. In this way they can internalize the chain from production to retail without having to engage in market transactions. Actors in this Channel are good potential candidates for collaborating on interventions to raise quality and increase production, but they would have to adopt their supply strategy to include outsourcing of honey from medium and large farmers as a precondition.

CHANNEL 4: EXPORT SALES OF BRANDED HONEY

This Channel is largely an extension of Channel 2 with an export sales branch. Supply comes mainly from the two largest branded honey producers. Each of these actors has developed a network of importers mainly through personal marketing efforts to export markets in the GCC and Africa where they have contacts in the Lebanese diaspora. One large producer has recently developed an import relationship in the US as well, although volumes remain extremely small. This Channel has significant expansion potential due to the general lack of experience of Lebanese honey exporters, and the potential appeal of a product in both ethnic and specialty markets.

CHANNEL 5: EXPORT SALES OF UNBRANDED HONEY

A small amount of export sales to regional markets consists of unbranded honey sent directly by larger farmers to personal contacts in the Arab Gulf. This Channel is essentially an extension of Channel 1. In the past, exports in this channel were largely supplied informally by travelers carrying tins of honey on buses. Recently security concerns about transport through Syria have resulted in more formal shipments, often to GCC importers who may repackage honey using their own brands. As with Channel 1, this relatively informal channel has little upgrading potential—both because of the generally high prices and because of the importance of personal connections in providing an overall governance structure.

6. BUSINESS ENABLING ENVIRONMENT

Historically, honey production has not been a major focus of Lebanon’s agricultural policy. In contrast, various donor and NGO projects have proliferated in the beekeeping sector. This is changing now, partly in response to the high visibility problems that were related to the contaminated exports to the EU that resulted in a three-year ban on animal product exports from Lebanon. It is also changing as a result of the growing recognition of the potential of honey production as a supplementary and important source of income to poorer rural households. The major elements of the evolving business enabling environment are detailed below.

ACCESS TO FINANCE

Lebanon’s commercial banking sector is one of the most advanced in the region, but credit flows overwhelmingly to urban areas. Credit to small and medium enterprises and the agricultural sector is relatively limited. Despite a growing number of programs to increase agricultural lending described in the text box to the right, access to finance is hindered by the mismatch between terms and conditions of available loan products and the needs and capacities of SMEs, including high interest rates, high collateral requirements, and a lack of seasonal loans structured for agriculture. The type of SME lending facilities being developed still target borrowers or investors operating at a scale that is beyond most honey value chain stakeholders. To target small and medium scale beekeepers that require smaller loans, small-scale microfinance operations in rural areas represent the most promising potential partner.

As of 2011, it has been a requirement for all honey in Lebanon to have product traceability to the farm/beekeeper level. Although this regulation has not been rigorously enforced, real progress has been made in terms of product traceability. This is in large part due to an effort to register cooperatives that accompanied the MOA’s campaign to fight diseases with the distribution of treatment. Beekeepers and cooperatives had to be registered in order to receive support, so that now cooperative and beekeeper registration is nearly 100%. Additionally, because the Lebanese honey market is structured such that large volumes of honey flow directly from the farmer to the consumer, traceability for the majority of honey is very straightforward. As consumers pay a premium for honey bought directly from the farmer or cooperative farmers are incentivized to put simple labels on their honey that include their names, region, and type of honey. Still, compliance with the measure is largely voluntary, since no effective control mechanism has been put into place.

Prior to 2013, honey sold in Lebanon was solely required to meet LIBNOR norms—which set limits for purity and freshness with a required battery of eight different simple chemical tests. Beginning in 2013, however a new decree setting stricter levels of pesticide and

- **Access to Finance Programs:** Although increasing capital flows to agriculture are yet to be seen, a diversity of programs to support access to support access to finance has been established since 2005. These include:
- Kafalat loan guarantee: Established in 2007 with Central Bank Support, Kafalat offers guarantees to participating commercial banks including Byblos, Fransabank, and Credit Libabais to cover a percentage of loan principles to SMEs. As of the end of 2009, \$156 million in 1,844 loans had been approved for agriculture sector uses.
- IDAL Investment Incentive Packages: IDAL provides subsidized program for honey exports
- IDAL provides tax breaks and streamlined licensing to qualifying investments in a variety of sectors including agriculture. The investment requirements are prohibitively high for stakeholders in the honey value chain.
- BDL interest rate subsidies and reserve requirement exemptions
- The Economic and Social Fund for Development SME loan guarantees
- IFC support for SME lending and trade finance.
- Ministry of Agriculture and Fransabank partnership to increase agricultural lending.
- Lebanon Investment in Microfinance program supports increasing microfinance for agriculture with specific programs from Al Majmoua and ADR, two of the largest MFIs.

chemical residues in honey is entering into force, notably with the enactment of residue thresholds for the common antibiotics of tetracycline and oxytetracycline that will be progressively reduced with a total ban on their use as of 2015. The new regulations also pose new effective residue limits on a total of 54 different chemicals and pesticides beginning in 2013. These new regulatory standards are designed to bring Lebanese honey standards broadly in-line with those enforced in the EU over the next two years.

LIBNOR honey standards have been challenged since they apply a lower threshold for the allowable limit on hydroxymethylfurfural (HMF) than is permitted in the FAO's Codex Alimentarius, which sets commonly accepted international standards. Since this limit is also lower than that applied towards domestic honey producers, this differential treatment of imports and domestic production is contrary to WTO rules and will have to be changed in the future as Lebanese accession to the WTO is formalized. The proposed standard is expected to increase the importation of produce into Lebanon. Still, given the high level of imports even with the stricter threshold of HMF, it is unlikely that this change would by of itself have a large impact on the market.

EXPORT MARKET QUALITY REQUIREMENTS

Testing is required of all export shipments of honey. This is done by the three main laboratories with capacities for honey testing (LARI, IRI, and the QCC Laboratory in Tripoli). Exports to the region and to the US follow each country's limits on pesticide residues—which they are able to comply with by contracting one or the other of the various Lebanese laboratories.. This is liable to pose a problem if the local laboratories are not able to upgrade their equipment to certify compliance with standards.

It is important to note also that the Lebanese laboratories do not certify shipments as being compliant with importers' residue regulations for the simple fact that there is no physical control mechanism in place to trace samples to specific shipments.

7. EXTENSION SERVICES AND NGO SUPPORT PROGRAMS

Extension services to the honey value chain have come overwhelmingly from the donor and NGO community, and have focused on technical aspects of production. Since 2000, there have been over 17 different programs providing support to the honey value chain—mainly to groups of beekeepers in cooperatives.. As is typical of donor projects, these programs have typically provided equipment for improved honey filtration, centrifuges, wax sterilization, queen bee rearing, and other processes. Only one program has mentioned activities to educate consumers on honey quality and there is no evidence of an intervention focused on improved marketing, labeling, or working with private sector commercial actors. The recent increase in the value of honey, increased activity from commercial honey stakeholders in Lebanon, and greater government support has generated two dynamic trends.

INCREASING SALES OF BRANDED HONEY FOR THE DOMESTIC MARKET

Before 2006, the only honey available in mainstream Lebanese retail outlets was imported- predominantly from Saudi Arabia and the EU. Since 2006 however, when domestic commercial producers first accessed retail markets, these channels (channels two and three in the VC Map) have expanded dramatically. As of 2008, large brands had penetrated the major distribution networks, and are now established in mainstream retail circuits. This last fact is highly important, it means that there is a certain volume threshold that is needed for honey producers to “crack” the domestic market and integrate themselves as a product that major distributors want to carry.

An interesting aside to this development is that while the initial push for sales of branded honey into formal retail circuits was driven by USAID funded interventions to promote cooperative brands, the various cooperatives brands have failed to grow beyond their initial trial volumes. In contrast, this market channel has been quickly dominated by private commercial actors. The fact that cooperative brands are unable to achieve the necessary threshold volumes to access major distribution networks is likely to continue to weigh against their growth potential.

Long term trends for expansion in the supermarket segment coupled with the new domestic market regulations on pesticide residues both argue for continued expansion of this segment of the Lebanese honey market. Given the weaknesses in cooperatives, it is likely that this segment will continue to be driven by private commercial brands. Future trends may also include new product development building on the fact that a few types of honey are associated with medicinal properties and can be found in pharmacies. Expansion of product offerings to include flavored honeys such honey with walnuts and fruit flavored honey also reflect increasing competition and diversification in domestic markets.

INITIAL PENETRATION INTO THE US IMPORT MARKET AND UPGRADING OF HONEY EXPORTS TO SAUDI ARABIA

In the US export market, Lebanese commercial honey brands, are making trial sales into the mainstream market, moving beyond the normal ethnic market. Although Lebanese brands traditionally sell in niche markets that target the diaspora community, expansion with branded sales into the non-ethnic market with a superior quality branded product offer attractive long term potential. Achieving this will require much effort in terms of product definition and brand investment. The higher levels of permitted antibiotic residue levels in the US market also make it an attractive target for Lebanese exporters of honey, in contrast to Europe. Although the development of exports to the US market is still at a bridgehead stage, the initial work that has done is impressive and it is likely that Lebanese commercial producers will continue to focus on expansion in this market. It is also highly significant that Lebanese exporters are establishing a brand presence in Saudi Arabia, with a rapid expansion of branded exports of Lebanese honey on the shelves of Saudi Arabian retailers. This development, coupled with the growth in domestic market branded sales and initial penetration of the US market means that the medium term outlook for increased sales of bottled branded honey is bright—both in domestic and some key export markets.

8. VALUE CHAIN OPPORTUNITIES AND CONSTRAINTS

OPPORTUNITY #1: CAPITALIZE ON HIGH PROFITABILITY OF HONEY FOR SMALL BEEKEEPERS BY SUSTAINING AND EXPANDING PRODUCTION

It makes most sense to expand production by investing in small beekeepers who can use cooperative and family labor to lower their costs and who can easily negotiate hive placement on the basis of personal relationships. In this scenario, it makes sense to increase production of beekeepers with under 100 hives. Expanding production with this lower level of beekeeper is more likely to be viable as a household revenue generation activity for poorer households.

The major constraints that will impede progress towards this opportunity are:

Once producers reach the 25 hive threshold, they will need to be assisted with market linkages to buyers. This model can be expanded with efforts to establish the needed vertical linkages and protocols that can establish ongoing supply relationships between such producers and commercial branded honey producers

who are able to access the high volume market channels either in the domestic branded segment or in the export market. This model may not work for producers with under 25 hives who can easily sell all they can produce into the higher priced direct household sales market segment.

New beekeepers will require extensive training and counseling during their first year of production and existing beekeepers will require follow-up advanced training. Production increases will need to be divided between the expansion of existing beekeepers and the entry of new beekeepers into production—particularly in underserved zones. Critical areas where more training and extension is needed for beekeepers include: management of hives to prevent swarming; hive protection in winter; proper hygiene and honey production; supplementary bee feeding; varroa control and prevention and treatment of American foulbrood disease; harvesting; and queen bee renewal and insertion.

Financing needs to be obtained for initial investments. Financing of investments in beekeeping should be easier than for many agricultural crops. Fixed investment amounts are relatively small. Also, periods to payback for initial investments in start-up beekeeping operations, as shown in Figure 13, are under one year if the beekeeper practices hive migration. Even without hive migration, a small beekeeper can repay his initial investments in two years. Thus, possibilities for micro-finance products adapted to beekeeping should be favorable as are possibilities for encouraging value chain financing articulated through commercial brand owners who could play a role as guarantor or by processing payments to their honey suppliers through lenders to the same beekeepers with a check-off system for loan repayments.

OPPORTUNITY #2: INCREASE LOCAL MARKET SHARE FOR LOCAL BRANDED HONEY VERSUS IMPORTED HONEY

Currently, cooperatives and small honey brands do not have large enough portfolios of brands to pay for retail space in domestic markets. Major distributors in Lebanon, all of which have established expansive networks in retail markets. Even smaller distributors require at least 5 tons of honey per year provided in a consistent and reliable manner. Except for the largest commercial honey producers, honey producers do not yet produce high enough volumes to work with these large scale distributors and to access the expanding supermarket channel. With increased volumes of honey flowing from expanded production from opportunity #1, it should be possible for a number of new commercial processors and brand owners to achieve the needed quantity threshold to expand their market presence in the upper ends of the Lebanese retail distribution network. This will yield a big increase in the value of honey being sold in the branded segment of the domestic market and help to displace imports of the higher quality honey now on sale in Lebanon in these venues.

Constraints to this happening include:

Smaller brand owners lack the financial means and the necessary understanding of what is required to develop a brand. Many smaller honey brand owners view branding as essentially just putting a label on a package. They need to be guided through the different steps of developing a brand and putting together a commercial package that responds to retailer and distributor needs.

Lebanese consumers remain reticent to trust the quality of bottled branded honey. The lack of consumer confidence in “industrial” products is a constant in Lebanon and is particularly keen in honey. Investment in measures to increase the trust of consumers in honey purity and health standards, if successful, can be a huge gain for the sector as a whole, as it will fuel an increase in demand and acceptance of higher retail prices in the bottled branded market segment. Addressing this constraint will require coordinated action

at a higher level than that of the commercial brand owners—due to a lack of public trust in these players. A combination of quality labeling with a clear process of third party verification, articulated with the existing honey testing laboratories, along with private investments in publicity campaign for the resulting quality label would be necessary. To be successful, however, this type of initiative will need to be driven by a strong demand emanating from a critical mass of actors in the value chain as a whole.

OPPORTUNITY #3 EXPAND EXPORTS TO GCC AND AMERICAN MARKETS

Export potential for expanding branded exports to the GCC (including other countries than the UAE and Saudi Arabia) and to the US are quite promising. However, progress on this front is limited by the same difficulties that hinder growth of domestic branded sales, which are magnified by the fact that the orientation is in hyper-competitive export markets. This specific constraint is described below.

Lebanese brand owners lack the skills and financial means to back their brands in export markets. In many cases, honey exporters to GCC markets in particular lack a professional marketing and sales department that can navigate and maneuver in wholesale and retail markets. In general, in house marketing functions are under-staffed and lack computer-based communication skills. Market entry costs, especially in the GCC, are prohibitively expensive, . Without an adequate marketing and branding plan, Lebanese honey brands risk failure in GCC markets and loss of significant investments. In the US marketing difficulties are even more formidable. Oftentimes breaking into the US market will require either identifying new ethnic market importers/distributors who are willing to place Lebanese brands up front on the shelves (and not use them as mixes for their own brands) or for going through mainstream distributors of specialty product with a specifically designed marketing campaign that is developed for this segment. In either case, a real investment in design and in-store promotion campaigns will be essential and costly.

9. VALUE CHAIN UPGRADING STRATEGY AND INTERVENTION

LIVCD interventions in the honey value chain will be tailored to boost competitiveness of Lebanese honey in both domestic and export markets. Increased competitiveness of branded commercial honey in the high value honey segment will in turn increase the demand for honey from rural honey producers. The strategy will be differentiated from previous honey support projects by emphasizing vertical linkages between private commercial brands and smaller beekeepers with under 100 hives, rather than seeking to build cooperative marketing structures that lack the financial strength and incentive to invest in brand development. This strategy will marry the productive strength of small beekeepers (low costs, low initial investment requirements combined with low economies of scale) with the marketing strengths of private commercial honey brand owners. LIVCD will play the key role of facilitator to ensure the two ends of the chain work together while building each actor's capacities and arranging needed third party support services.

LIVCD's upgrading strategy has three major axes that are described below:

AXIS ONE: Sustain and increase production of honey flowing into the branded honey channels through improved linkages between commercial branded honey processors/exports and small beekeepers.

This will be done through the following actions:

1. Sustain and Increase Production per Beehive of existing producers. LIVCD will facilitate technical assistance and training to beekeepers through extension service providers and value chain actors including cooperatives listed in Figure 16, NGOs, and Universities. Training will promote professional beekeeping technical practices, as well as hive migration.

2. Expand the number of hives in production by small and medium beekeepers. Since the number of female beekeepers is limited throughout Lebanon, LIVCD aims at increasing the female participants in the honey value chain in Lebanon through recruiting new female beekeepers in cooperatives by raising awareness and including them in the beehive distribution and training activities.

3. Facilitate Market Linkages for Beekeepers: LIVCD will facilitate market linkages between beekeepers and commercial honey brands that can absorb surplus honey production that is not sold directly to households. LIVCD will also link with brands that are well established in local markets, but do not have any honey products in their product portfolios to add new honey products. As these commercial brands grow increasingly sophisticated and profitable, beekeepers will see higher demand and opportunities for diversification. A key aspect of this facilitation is likely to be the development of quality protocols and traceability documentation. If necessary, a testing program will be explored to ensure compliance with needed commercial market standards (both domestic and export). The model for these linkages will be based on the lead beekeeper arrangements that have proved to be so successful, with modification based on local conditions.

AXIS TWO: Strengthen key actors in the domestic branded honey market segment.

1. Improve branded product distribution networks. In domestic markets, LIVCD will facilitate market linkages between the small scale cooperative and commercial brands, and distributors or larger brands that are already in large distribution networks. These efforts will be focused on the brands who agree to enter into sourcing agreements with smaller beekeepers being assisted under Axis One. LIVCD will work with brand owners to develop true brand strategies focusing on specific market segments and retailers.

2. Support Quality certification. To build trust and brand equity, LIVCD will build upon growing momentum of quality testing and production standards to develop a quality seal or certification in cooperation with Value Chain actors. LIVCD will work with different VC partners to develop standards and put in place a chain of custody protocol to ensure that the tested samples reflect actual marketed products. LIVCD will work with various partners to develop and finance a publicity campaign

AXIS THREE: Supporting Lebanese honey exports

1. Help develop needed testing capacity for export market tests in Lebanese honey laboratories. LIVCD will work with and other honey testing laboratories to upgrade capacity such that facilities can test for antibiotic residues to the level of precision require by European markets. This will involve significant investment in equipment as well as training of technicians and beekeepers.

2. Professionalize Marketing Plans of Exporters. LIVCD will work with brand owners having the potential to export in sufficient quantities to improve their export marketing capacity. The project will facilitate development of comprehensive market entry and expansion plans that target key destination markets in GCC countries and the US.

3. Facilitate Market Linkages with Importers. LIVCD will facilitate participation in international trade shows and events in strategic US and GCC countries. The project will send professional staff and partners

to target export markets to establish relationships with importers and other honey players. The LIVCD team will also look into established export channels for similar Lebanese products and identify and link with umbrella brands that are already succeeding in export markets.

10. IDENTIFICATION OF A BUSINESS MODEL FOR REPLICATION WITHIN THE HONEY VALUE CHAIN

INCREASING HONEY EXPORTS AND SUPPORTING BEEKEEPERS THROUGH A JOINT PRODUCT PROMOTION

The purpose of the Joint Product Promotion is to increase income and improve access to market for beekeepers in rural areas. The project addresses a major constraint identified in the value chain assessment phase in terms of helping commercial honey producers establish the needed vertical links with smaller household-level beekeepers to source honey and take advantage of market linkages to seize opportunities in both export and domestic markets. This activity will boost incomes for all stakeholders in the value chain, and channel profits into rural areas/ host communities.

The lack of sophisticated marketing strategies within the honey value chain highlights the need to invest in product promotion strategies to develop market access on a consistent basis. In addition, this activity is part of the overall LIVCD strategy to improve small and medium-scale honey producers' access to markets and increase the demand for Lebanese honey. The joint product promotion in export markets should target an important and potentially lucrative market segment in the U.S , U.A.E and other export markets.

The following are the key objectives of this activity:

- 1) Facilitate honey production flow into export markets through improved linkages between commercial honey processors/exporters and small and medium beekeepers.
- 2) Create new sustainable markets in export markets for beekeepers in Lebanon to access.
- 3) Support Lebanese honey exports.

Outcomes:

- 1) Increase exports.
- 2) Large number of beekeepers will be able to sell their honey
- 3) Lebanese honey will be more accessible and have a wider distribution in export markets. The activity contributes to the following LIVCD Intermediate Result and Objective:

LIVCD Sub IR 1 Increase Access to Market in target value chain:

The promotional campaign will support an expansion of an existing distribution network for Lebanese food in the US and UAE markets, increasing the number of retail outlets carrying Lebanese honey. This will increase sales of Lebanese honey at the export level.

LIVCD Sub IR 2 Increase Business Linkages in target value chain:

The activity supports linkages between small and medium beekeepers and the selected exporter with access to the U.S. and U.A.E export markets or other export markets. The local beekeepers will gain additional income from sales of their honey to meet the demand for high quality honey in the export markets.

Thus an increase in access to markets and increase in business linkages in turn contributes to the LIVCD Objective of Developing fully functioning, competitive value chains and increase in the incomes of the rural population including MSMEs.

The activity is tied directly to Activity 2.1: Facilitate market linkages for beekeepers and commercial honey brands and Activity 3.4: Marketing support in export market

SUSTAINABILITY

Following the implementation of this joint product promotion activity, Lebanese Honey will be present in new channels that will increase its visibility and we expect many more consumers in the US, UAE and other countries, will become and remain customers of Lebanese honey.

This will result in exporter sourcing additional volumes of honey from local farmers.

Exporter will purchase honey from large number of beekeepers to be used as promotional samples for distributors in U.S., UAE, and other countries, thus opening market opportunities for larger quantities on the long term and positioning Lebanese honey as high value product.

Exporter will source the honey from rural areas.

Selection of exporter:

Exporter should be a market leader in honey products in Lebanon, packaging only the highest quality natural products. Laboratory tests provide grading and classification of the honey before it enters the production process as the results guide filtration and packaging procedures. They should have the personnel and managerial capabilities to lead the proposed project.

LIVCD will monitor on a regular basis, following up with all direct beneficiaries and will coordinate with the exporter and beekeepers on monthly reports based on a template.

HONEY VALUE CHAIN ANNEXES

ANNEX 1: LEBANESE HONEY MARKET

TABLE 6: LEBANESE HONEY EXPORTS BY QUANTITY

Importers/Countries Lebanon exporting to	2007	2008	2009	2010	2011
	Exported quantity, Tons				
World	17	21	33	34	26
Saudi Arabia	2	1	14	7	10
United Arab Emirates	6	3	5	7	6
United States of America	2	0	3	2	3
Australia	0	1	0	0	1
Canada	0	0	0	0	1
Congo	0	1	0	1	1
Kuwait	0	12	3	2	1
Sweden	0	0	0	1	1
Angola	1	0	1	0	0
Democratic Republic of Congo	1	0	0	0	0
Equatorial Guinea	0	0	0	0	0
Iraq	0	0	0	0	0
Bahrain	1	1	2	1	0
France	0	0	0	0	0
Gabon	1	0	0	0	0
Gambia	0	0	0	0	0
Germany	0	0	0	0	0
Ghana	0	0	0	0	0
Guinea	0	0	0	0	0
Côte d'Ivoire	1	0	0	1	0
Jordan	0	0	2	0	0
Madagascar	0	0	0	0	0
Mozambique	0	0	0	0	0
Oman	0	0	0	0	0
Niger	0	0	0	0	0
Nigeria	0	0	1	1	0
Qatar	1	1	0	1	0
Senegal	0	0	0	0	0
Switzerland	0	0	0	0	0
Syrian Arab Republic	0	0	0	0	0
Tunisia	0	0	0	0	0
Egypt	0	0	0	10	0

Source: COMTRADE

TABLE 7: LEBANESE HONEY EXPORTS BY VALUE

	2007	2008	2009	2010	2011
Importers	Exported value, thousand USD				
World	163	269	416	423	334
Saudi Arabia	13	6	183	121	168
United Arab Emirates	66	43	63	93	79
United States of America	31	8	49	41	30
Kuwait	2	156	43	37	12
Qatar	26	18	10	17	9
Congo	2	6	2	9	6
Canada	0	0	0	0	4
Sweden	0	0	1	3	4
Switzerland	0	0	0	0	4
Senegal	4	3	1	1	3
Iraq	0	0	0	0	2
Côte d'Ivoire	7	3	0	4	2
Equatorial Guinea	0	0	1	0	1
Australia	0	21	0	0	1
Ghana	1	0	0	1	1
Jordan	3	0	20	0	1
Mozambique	0	0	0	0	1
Oman	0	4	7	0	1
Niger	0	0	1	1	1
Nigeria	1	0	3	9	1
Zambia	0	0	0	0	1
Angola	2	0	3	2	0
Democratic Republic of Congo	1	0	0	0	0
Bahrain	3	1	23	21	0

Source: COMTRADE

TABLE 8: LEBANESE HONEY IMPORTS BY VALUE

	2007	2008	2009	2010	2011
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Exporters	Exported value, thousand USD				
World	936	1,089	1,334	1,525	1,520
Saudi Arabia	489	525	776	818	805
Germany	98	135	210	159	228
Oman	0	0	0	0	150
Greece	163	167	85	156	131
Egypt	31	28	102	35	69
France	40	34	23	44	53
Canada	6	11	12	19	24
Spain	8	78	77	40	17
Bosnia /Herzegovina	0	0	0	0	12
New Zealand	85	105	13	4	11
United Kingdom	0	0	0	3	8
Poland	0	0	0	0	6
United States of America	1	1	1	6	2
Hungary	0	0	1	1	1
Iran	0	0	0	0	1
Italy	1	1	1	1	1
Area Nes	2	0	7	0	0
Argentina	0	0	0	1	0
Australia	2	0	2	0	0
Belgium	0	0	0	1	0
Kuwait	0	0	25	11	0
Netherlands	6	0	0	0	0
India	1	3	0	41	0
Tunisia	0	0	0	185	0

Source: COMTRADE

ANNEX 2: SEASONALITY

TABLE 9: HONEY TYPES IN LEBANON

	Honey types	Region of production	Period of Harvesting	Characteristics
1	Citrus blossom Honey	Coastal area especially in Saida and Tyre region	April	- The production quantity is highly depending on the climate condition. - in the citrus orchards the

				beehives suffer from pesticides spraying - sometime this honey contain pesticides residues - Crystallize early (after 5 months)
2	Multiple-flowers honey	Central region, elevation from 400 till 850 m.	July - August	From different kind of plants and trees followers. The quality and the characteristics change from region to other.
3	Honeydew honey	Central region: at elevation from 400 till 850 m. especially in Pine and oak forests area	June	This honey has dark color and rich in minerals
4	Mountain Honey (Jerdi)	The high mountain in Lebanon at elevation 850 m and above	September	The demand for this honey is high for it is quality, and sold at higher price.

ANNEX 3: SWOT ANALYSIS

The following table provides a brief summary of the strengths, weaknesses, opportunities, and threats to the Honey value chain as communicated by the LIVCD assessment team in this value chain assessment.

FIGURE 5: SWOT ANALYSIS

<p>Strengths</p> <ul style="list-style-type: none"> • Honey production engages large number of poor rural Lebanese households, providing income to over 5,500 rural households. • Lebanese honey is recognized to be of a high quality • Lebanon has a diverse terrain, allowing the production of diverse honey from the different regions, while alternating between orchards, natural flowers and forests • An active Beekeeping unit exists at AUB • Three labs test the honey in Lebanon: IRI, LARI and the lab at the Chamber of Commerce of Tripoli (QCC) • Several Honey cooperatives are available and active. • Branded honey exports in volume is increasing towards the GCC and US markets, boosting the Lebanese branded retail market’s confidence. • Beekeeping requires low initial costs (no land renting), regardless of the production scale (small, medium or large) • High profits goes directly to beekeepers, since 77% of the total honey production is sold directly by them to the consumers, at around US\$20-25/KG • Labor inputs are relatively minimal • All business models benefit from good profitability, with healthy revenues in year one for the medium and large producers. 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Beekeepers lack understanding of modern beekeeping techniques and professional marketing and sales knowledge. They also lack information and technical skills for treating diseases affecting bees and honey • New beekeepers require extensive training and counseling during their first year of production; existing beekeepers require follow-up advanced training • Producers who reach a capacity of 25 hives need assistance and market linkages to customers • Smaller brand owners lack of financial means and of competencies for brand development. They do not have the skills and financial means to develop their brands for export markets. • Consumers do not always value the honey quality, the domestic honey market being constituted of a large volume of very inexpensive “artificial” honey • Unbranded honey directly bought from beekeepers is perceived to be more trustful than the branded honey. • Limited quality testing and brand accountability led to a distrust in the branded Lebanese honey and an increase of imports • Exports generate low profits as they are made in bulk • Lebanese exports do not have a significant market share due to higher prices • Falloff in exports occurred between 2007 and 2011, especially in Kuwait and Qatar. The trend is unequal: from 17 tons in 2007, it peaked to 34 tons in 2010, and fell to 26 tons in 2011 • Conditions and stringent requirements are imposed on the Lebanese honey exports to the EU, due to lack of constant quality and product certification. • Tests for exports are highly expensive
<p>Opportunities</p> <ul style="list-style-type: none"> • Improvements & expansion by boosting income for all commercial honey producers, and small household beekeepers • Beekeeping is limited to technically knowledgeable workers (Lebanese labor) • Capitalize on high profitability of honey for small beekeepers by sustaining and expanding production 	<p>Threats</p> <ul style="list-style-type: none"> • Various production threats: American foulbrood disease, the varroa mite, and colony collapse disorder (CCD) • Beekeepers not meeting regulations • The proposed standard: a lower threshold for the allowable limit on hydroxymethylfurfural (HMF) than is permitted in the FAO’s might lead to an

<ul style="list-style-type: none"> • Positive contribution from NGOs and donor projects • Generating high quality certificates creates brand equity and trust. • Increase local market share of local branded honey versus imported honey • The world honey market has been increasing in terms of value and volume • Increasing trends for Exports and branded domestic markets • New opportunities in the EU market after a three year ban on Lebanese honey imports. • Worldwide customers willing to pay more for a price premium honey perceived to be of a higher quality • IDAL subsidized program for honey exports • KSA is a fertile market to increase exports (wealthy population which consumes expensive honey) 	<p>increase of the importation of produce into Lebanon. KSA's inexpensive honey imports</p>
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